

### **REMARKS**

Claims 1-21 are pending. Claims 1, 8-11, 13, 15, and 18-20 have been amended. Claim 21 is newly presented. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

#### **In the Specification**

The specification was objected to because of an informality on on page 5, line 21. Specifically, the Office Action suggested that the term "reflection" should be changed to -- transmission--. Applicants have amended the specification in accordance with the suggestions in the Office Action. Accordingly, Applicants respectfully request reconsideration and withdrawal of this objection.

#### **Claim rejections Under 35 U.S.C. § 103**

Claims 1, 2, 4, 5, 7, and 11-20 were rejected under 35 U.S.C. § 103(a) over Laming et al. (U.S. Patent No. 6,466,311). Applicants respectfully traverse this rejection.

Claim 1 recites, in part, a method of reducing systematic errors in grating writing which includes numerically designing a theoretical test grating structure for desired spectral characteristics, writing a complete test grating structure experimentally in a first portion of a first waveguide and according to the theoretical test grating structure design using a grating writing arrangement, measuring the actual spectral characteristics of the complete test grating structure, and reconstructing an actual design of the complete test grating structure from the actual spectral characteristics. In contrast, Laming discloses a method of detecting diameter variations in an optical waveguide. As would be understood by a person skilled in the art, a diameter fluctuation is a random, not systematic, error.

Additionally, Laming discloses (column 1, lines 45-55) a method of fabricating the optical fibre waveguide by fabricating a grating section, measuring the deviation from the expected response of the most recently written previous grating section and varying a parameter for writing a next grating section. Laming does not disclose writing a complete test grating since the fabricating is performed in sections. Further, Laming does not disclose measuring the actual spectral characteristics of the complete test grating structure since Laming discloses measuring the deviation from the expected response of the most recently written previous grating section and varying a parameter for writing a next grating section. Accordingly, Laming does not teach or suggest, a method of reducing systematic errors in grating writing which includes numerically designing a theoretical test grating structure for

desired spectral characteristics, writing a complete test grating structure experimentally in a first portion of a first waveguide and according to the theoretical test grating structure design using a grating writing arrangement, measuring the actual spectral characteristics of the complete test grating structure, and reconstructing an actual design of the complete test grating structure from the actual spectral characteristics, as recited in claim 1.

Claim 15 is believed allowable for at least the same reasons presented above with respect to claim 1 since claim 15 recites a method of writing a grating structure in a portion of a first optical waveguide utilizing a grating writing arrangement, which includes utilizing compensation information gained from writing a complete test grating structure experimentally using the same grating writing arrangement and according to the theoretical test grating structure design in a different portion of the first waveguide or a different waveguide and measuring the actual spectral characteristics of the complete test grating structure. As discussed above Laming does not teach or suggest at least these features.

Claim 17 is also believed allowable for at least the reasons presented above with respect to claim 1 since claim 17 recites an arrangement for grating writing in an optical waveguide which includes a processing means arranged, in use, to control the writing of a grating structure based on a theoretical grating design and compensation data obtained for the arrangement to compensate for systematic errors. As discussed above, Laming discloses a method of detecting diameter variations in an optical waveguide which is a random error and therefore does not teach a processing means to compensate for systematic errors, as recited in claim 17.

Claims 2, 4, 5, 7, 11-14, 16, and 18-20 are believed allowable for at least the reasons presented above with respect to claims 1, 15, and 17 by virtue of their dependence upon claims 1, 15, and 17. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

### **Conclusion**

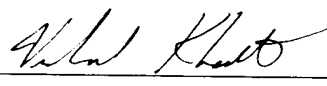
Applicants appreciate the Examiner's indication that claims 3, 6, and 8-10 contain allowable subject matter and would be allowable if rewritten in independent form to include all of the features of the base claim and any intervening claim. However, in view of the foregoing, all the claims are believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Please charge any fees associated with the submission of this paper to Deposit Account Number 03-3975 under Order No. 7287/283718. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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